

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of watermarking a video signal by applying a watermarking function to motion vectors calculated by estimation of movement between images of the video signal, the method comprising the following steps:

- applying the watermarking function to at least some of the calculated motion vectors; and

- generating the watermarked video signal by compensating movement with the aid of the watermarked motion vectors,

the watermarking function being applied with the aid of a binary marking key, each bit of which is associated with at least one selected motion vector, wherein, in order to apply the watermarking function, the method further comprises the following steps:

- marking a point (V) corresponding to the coordinates (V_x, V_y) of the selected motion vector (\vec{V}), the marking taking place in a reference space (O, x, y) divided into a plurality of predetermined portions;

- defining two complementary zones Z₀ and Z₁ in each portion, one of the two zones being situated inside the other one;

- assigning a binary value to each of the two zones; and

- if the point corresponding to the coordinates of the selected motion vector ~~are~~ is in the zone of the portion to which it belongs, of binary value which corresponds to the bit of the marking key with which the selected motion vector is associated, not modifying the coordinates of the selected motion vector;

- if the point corresponding to the coordinates of the selected motion vector ~~are~~ is not in the zone of the portion to which it belongs, of binary value which corresponds to the bit of the marking key with which the selected motion vector is associated, modifying the coordinates of the selected motion vector so that the point~~it~~ is in the zone, of binary value which corresponds to the bit of the marking key with which the selected motion vector is associated.

2. (Previously Presented) The method according to claim 1 for watermarking a video signal, wherein the reference space is a reference grid including blocks with predefined dimensions, each block including first and second zones.

3. (Previously Presented) The method according to claim 1 for watermarking a video signal, the method including the following steps:

- calculating a hierarchical plurality of successive levels of motion vectors, the motion vectors of a given level each being associated with a plurality of motion vectors of the next lower level;

- selecting at least some of the motion vectors belonging to the highest level;

- applying the watermarking function to each selected motion vector, leading to calculating a modification parameter for said motion vector; and

- applying the modification parameter of the selected motion vector to the motion vectors of a lower level associated with said motion vector.

4. (Previously Presented) The method according to claim 3 for watermarking a video signal, wherein the motion vectors of a given level are each equal to the average of the motion vectors of the next lower level with which they are associated.

5. (Previously Presented) The method according to claim 3 for watermarking a video signal, the method including a step of calculating a hierarchy of two successive levels

of motion vectors, each motion vector of the higher level being associated with four motion vectors of the lower level.

6. (Previously Presented) The method according to claim 1 for watermarking a video signal, wherein the first and second zones have substantially equal areas.

7. (Previously Presented) The method according to claim 2 for watermarking a video signal, wherein a sub-block centered inside the block is defined in each block of the reference grid, the first zone being defined by the interior of the sub-block and the second zone being the zone in the block complementary to the first zone.

8. (Previously Presented) The method according to claim 7 for watermarking a video signal, wherein the blocks and sub-blocks of the reference grid are rectangular.

9. (Currently Amended) The method according to claim 1 for watermarking a video signal, wherein the modification of the coordinates of the selected motion vector, if any, ~~applied to the selected motion vector~~ (\vec{V}) is a weighted symmetry applied to the point (V).

10. (Currently Amended) The method according to claim 8 for watermarking a video signal, wherein the modification of the coordinates of the selected motion vector, if any, ~~applied to the selected motion vector~~ (\vec{V}) is either a weighted central symmetry relative to one of the vertices of the sub-block or a weighted axial symmetry relative to one of the sides of the sub-block applied to the point (V).

11. (Previously Presented) The method according to claim 1 for watermarking a video signal, wherein each bit of the binary marking key is associated with a plurality of selected motion vectors.

12. (Previously Presented) The method according to claim 1 for watermarking a video signal, wherein some of the bits of the binary marking key are associated with motion

vectors calculated by motion estimation between two images of the video signal, and wherein at least one other portion of the bits of the binary marking key is associated with motion vectors calculated by motion estimation between at least two other images of the video signal.

13. (Previously Presented) A device for watermarking a video signal, the device including means for implementing the method according to claim 1.

14. (Previously Presented) A computer readable data medium, including means for storing a video signal watermarked with the aid of the method according to claim 1.

15. (Currently Amended) A method of extracting watermarking from a video signal watermarked by applying the method according to claim 1, which extraction method comprises applying a function for extracting the binary marking key comprising:

- selecting the watermarked vectors;
- marking a point corresponding to the coordinates of each watermarked motion vector, the marking taking place in the reference space; and
- assigning the binary value of the zone in which the point ~~watermarked vector~~ is situated to the bit of the marking key with which the selected motion vector is associated.

16. (Previously Presented) The method according to claim 15 for extracting the watermarking from the video signal, the video signal further watermarked by the following steps:

- calculating a hierarchical plurality of successive levels of motion vectors, the motion vectors of a given level each being associated with a plurality of motion vectors of the next lower level;
- selecting at least some of the motion vectors belonging to the highest level;
- applying the watermarking function to each selected motion vector, leading to calculating a modification parameter for said motion vector; and

- applying the modification parameter of the selected motion vector to the motion vectors of a lower level associated with said motion vector;

wherein, for each motion vector of the highest level selected on application of the watermarking method, the following steps are applied:

- extracting the watermarked motion vectors associated with said motion vector;
- calculating an average vector equal to the average of the watermarked motion vectors associated with said motion vector; and
- applying the marking key extraction function to the calculated average vector.

17. (Previously Presented) A device for extracting the watermarking from a video signal, the device including means for implementing the method according to claim 15.

18. (Currently Amended) The method according to claim 9, for watermarking a video signal, wherein the modification of the coordinates of the selected motion vector, if any, ~~applied to the selected motion vector (\vec{V})~~ is either a weighted central symmetry relative to one of the vertices of the sub-block or a weighted axial symmetry relative to one of the sides of the sub-block applied to the point (V).